

**Appln No. 10/634,337**  
**Amdt date February 28, 2008**  
**Reply to Office action of November 28, 2007**

### **REMARKS/ARGUMENTS**

Claims 1-2, 5-6, 8-9, 11-19, 25-27, 31-34 and 36-37 are pending in the present application, of which claims 1, 9, 12, 18, 19, 25-27, 31-32 and 37 are independent. Claims 3-4, 7, 10, 20-24, 28-30 and 35 have been canceled without prejudice. Claims 1, 5-6, 8-9, 11-12, 17-19, 25-27, 31-32 and 37 have been amended. No new matter has been added. Applicants thank the Examiner for the indication that claims 12-14, 26, 31-34 and 36-37 would be allowable if the objection is overcome and that claims 19 and 25 would be allowable if rewritten in independent form. Applicants respectfully request reconsideration and allowance of claims 1-2, 5-6, 8-9, 11-19, 25-27, 31-34 and 36-37.

#### **I. Telephone Interview.**

Applicants thank the Examiner for the time and courtesy extended to Applicants' attorney during the telephone interview of January 10, 2008. Claim 1 was discussed in referenced to Gwon (CN 1361510) and Kasai (USP 6,989,826). While no agreement has been reached as to the allowability of any additional claims in particular, the Examiner gave some guidance regarding the allowable subject matter of the present application. In particular, Applicants thank the Examiner for the indication that claims directed to embodiments of FIGs. 3, 8 and 10 are likely allowable. While Applicants appreciate with thanks this indication of likely allowable subject matter, Applicants do not necessarily concede that claims that may be directed to other embodiments are not patentable.

#### **II. Claim Objections**

Claims 1-8, 12-21, 24-28, 31-34 and 36-37 were objected to because the phrase "capable of" allegedly renders claims 1, 12, 17-18, 24, 26, 27, 31, 32 and 37 indefinite. As the phrase "capable of" have been deleted from claims 1-2, 5-6, 8, 12-19, 25-27, 31-34 and 36-37 and claims 3-4, 7, 10, 20-21, 24 and 28 have been canceled, Applicants request that the objection to claims 1-8, 12-21, 24-28, 31-34 and 36-37 be withdrawn.

### III. Claims Rejected Under 35 U.S.C. §103(a)

#### Claims 1-8, 11 and 15-17

Claims 1-8, 11 and 15-17 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Gwon (CN 1361510) in view of Kasai (U.S. Patent No. 6,989,826). Since claims 3, 4 and 7 are canceled herein, their rejection is now moot.

Applicants respond and traverse as follows.

On page 4 of the Office Action, while rejecting claim 1-8, 11 and 15-17, the Examiner states that "Kasai teaches a display panel comprising a third switching element (213) being turned off in response to a second control signal (V2 is at the L level) . . . for electrically isolating a first transistor (214) from a display element (220) in response to a second control signal (current scanning signal (Yn)), so as to prevent a current being applied to the display element (220) . . ."

Here, the Examiner appears to equate the gate line Yn (V1, V2) of FIG. 4 of Kasai et al. with the "second control signal" of claim 1. However, the n-th ("current") gate line Yn as illustrated in FIG. 4 of Kasai et al. consists of two separate sub-gate lines V1 and V2 for transferring two distinct signals as shown in FIGs. 5(a) and 5(b). By way of example, Col. 5, lines 22-23 of Kasai et al. recites "The gate line Yn includes two sub-gate lines V1 and V2 in this embodiment."

Therefore, in Kasai et al., neither of the signals V1 and V2 applied respectively to the transistors 212 and 213, is a previous selection signal for electrically isolating the first transistor from the display element, so as to prevent a current from being applied to the display element while the capacitor is being charged with the precharge voltage.

Independent claim 1 now recites, in a relevant portion,

A display panel for image display using a voltage programming method, said display panel comprising a plurality of data lines for transferring a data voltage representing an image signal, a plurality of scan lines, and a plurality of pixel circuits, each pixel circuit being coupled to a corresponding said data line, a current scan line among the scan lines for transferring a current selection signal and a previous scan line among the scan lines for transferring a previous selection

signal, each pixel circuit comprising . . . the first switching element transfers the data voltage from the data lines to the second transistor in response to the current selection signal . . . a third switching element configured to be turned off in response to the previous selection signal for electrically isolating the first transistor from the display element, so as to prevent a current from being applied to the display element while the capacitor is being charged with the precharge voltage.

Such use of the "previous selection signal" for both turning off the third switching element and electrically isolating the first transistor from the display element is neither taught nor suggested in Kasai et al. that teaches using two signal lines (i.e., two sub-gate lines V1 and V2) of the n-th ("current") gate line Yn. In addition, Kasai et al. teaches a current-program type pixel circuit, which is different from the voltage-programming type pixel circuit of claim 1. Further, there is no apparent reason why one skilled in the art would have combined the teachings of Kasai et al. with Gwon to arrive at the claimed invention of claim 1 at the time when the invention was made. Therefore, Applicants request that the rejection of claim 1 be withdrawn and that this claim be allowed.

Since claims 2, 5, 6, 8, 11 and 15-17 depend, directly or indirectly, from claim 1, they each incorporate all the terms and limitations of claim 1, in addition to other limitations, which together further patentably distinguish these claims over the cited references. Therefore, Applicants request that the rejection of claims 2, 5, 6, 8, 11 and 15-17 be withdrawn and that these claims be allowed.

Claims 9, 10, 18, 20-21, 24 and 27-28

Claims 9, 10, 18, 20-21, 24 and 27-28 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Gwon in view of Abe (U.S. Patent No. 7,209,101). Since claims 10, 20-21, 24 and 28 are canceled herein, their rejection is now moot.

Independent claim 9 now recites, in a relevant portion, "a third switching element configured to be turned off in response to the previous selection signal for electrically isolating the first transistor from the display element, wherein the second switching element comprises a

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transistor of a first conductive type, the third switching element comprises a transistor of a second conductive type, the second conductive type being an opposite of the first conductive type." (emphasis added).

In rejecting claim 9, the Examiner contends "Abe teaches a display panel comprising switching means of first switching element (Qp2) for interrupting the being turned off in response to a second control signal (CLK1#K)(current scanning line) for electrically isolating a first transistor (Qp2) from a display element (LED) . . .," and refers to FIGs. 1-5 and 15-16.

However, Abe does not teach or suggest "a third switching element configured to be turned off in response to the previous selection signal for electrically isolating the first transistor from the display element." Since Gwon and Abe together do not disclose "a third switching element configured to be turned off in response to the previous selection signal for electrically isolating the first transistor from the display element," Gwon and Abe together do not teach or suggest at least one limitation of claim 1. Further, there is no apparent reason why one of ordinary skilled in the art would have combined the teachings of Gwon and Abe to arrive at the claimed invention at the time when the invention was made. Therefore, Applicants request that the rejection of claim 9 be withdrawn and that this claim be allowed.

Independent claim 18 now recites, in a relevant portion, "transferring a precharge voltage to the control electrode of the first transistor in response to a previous selection signal from the previous scan line during a first time period; transferring a data voltage to the control electrode of the first transistor through the second transistor in response to a current selection signal from the current scan line during a second time period . . . wherein the first transistor is electrically isolated from the display element in response to the previous selection signal during the first time period." (emphasis added).

As can be seen in FIGs. 1-5 and 15-16 of Abe cited by the Examiner, Abe does not teach or suggest a previous selection signal from a previous scan line, in response to which a) a precharge voltage is transferred and b) the first transistor is electrically isolated from the display element. Therefore, Abe does not teach or suggest at least one limitation of claim 18. Further, there is no apparent reason why one of ordinary skilled in the art would have combined the

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teachings of Gwon and Abe to arrive at the claimed invention of claim 18 at the time when the invention was made. Therefore, Applicants submit that claim 18 would not have been obvious over Gwon and Abe at the time when the invention was made. Therefore, Applicants request that the rejection of claim 18 be withdrawn and that this claim be allowed.

Independent claim 27 now recites, in a relevant portion, "switching means coupled between the first transistor and the display element, wherein the precharge voltage is applied to the control electrode of the first transistor in response to a previous selection signal from the previous scan line for a first time period, and the data voltage is applied to the control electrode of the first transistor in response to a current select signal from the current scan line for a second time period, and the first transistor is electrically isolated from the display element by the switching means during at least one of the first time period in which the capacitor is charged with the precharge voltage, or the second time period in which the capacitor is charged with the data voltage, and wherein the switching means is controlled by the previous select signal." (emphasis added).

Abe does not teach or suggest "switching means coupled between the first transistor and the display element, wherein the precharge voltage is applied to the control electrode of the first transistor in response to a previous selection signal from the previous scan line . . . wherein the switching means is controlled by the previous select signal." Therefore, Abe does not teach or suggest at least one limitation of claim 27. Further, there is no apparent reason why one skilled in the art would have combined the teachings of Gwon and Abe to arrive at the claimed invention of claim 27. Therefore, claim 27 would not have been obvious over Gwon and Abe at the time when the invention was made. Therefore, Applicants request that the rejection of claim 27 be withdrawn and that this claim be allowed.

#### **IV. Allowable Subject Matter**

Claims 19 and 25 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base

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claim and any intervening claims. Since claims 19 and 25 have been rewritten in independent form as required by the Examiner, Applicants request that these claims be allowed.

The Office Action also indicated that claims 12-14, 26, 31-34 and 36-37 would be allowable if the objection is overcome. Since the objection to these claims have been overcome by deleting the phrase "capable of", Applicants request that claims 12-14, 26, 31-34 and 36-37 be allowed. While claim 12 has been additionally amended slightly, Applicants submit that claim 12 is still allowable.

**V. Concluding Remarks**

In view of the foregoing amendments and remarks, Applicants earnestly solicits a timely issuance of a Notice of Allowance with claims 1-2, 5-6, 8-9, 11-19, 25-27, 31-34 and 36-37. If there are any remaining issues that can be addressed over the telephone, the Examiner is cordially invited to call Applicants' attorney at the number listed below.

Respectfully submitted,  
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